Preventing Pollution in Collision Repair

A Guide to Environmental Compliance and Pollution Prevention for Collision Repair Shops in Missouri

MISSOURI DEPARTMENT OF NATURAL RESOURCES
Technical Assistance Program
(800) 361-4827

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Printed on recycled paper.

The information in this publication is intended as general guidance only. For specific requirements, the reader should consult the appropriate federal and state laws and rules.

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For more information call (800) 361-4827 or write to
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Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102

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Preventing Pollution in Collision Repair

- Guide Sheet #1

As environmental protection becomes more and more important, industries of every type are faced with some big questions.

What environmental regulations apply to me and my facility?
How do I comply with those regulations?
Are there things I can do to reduce the number of regulations I must meet?
How can I protect myself from fines and liability?
How do I protect myself and my workers from environmental hazards in the shop?

This publication can help collision repair shops in Missouri answer some of those questions. The guides provide basic information about regulatory requirements and suggestions for protecting yourself, your workers and the environment through pollution prevention.

Each guide sheet deals with a separate issue that you may face in your collision repair shop. The guides will not answer every question you have. After reviewing them you should be able to decide if you need more information or help on a particular issue. The topics are listed on the back of this page. If you do repairs other than body work, you may need a copy of *Preventing Pollution in the Vehicle Maintenance Industry*. It covers topics such as used oil, antifreeze, parts washers, etc. Call (800) 361-4827 to request a free copy.

The Missouri Department of Natural Resources has a Technical Assistance Program (TAP) to help you comply with environmental regulations and find ways to prevent pollution. If you need help, call TAP at (800) 361-4827.

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Guide Sheets for the Collision Repair Industry

Guide Sheet #2, Pollution Prevention
Guide Sheet #3, Air Quality Permits
Guide Sheet #4, Equipment Cleaning
Guide Sheet #5, Fluorescent Bulbs
Guide Sheet #6, Glass
Guide Sheet #7, Hazardous Wastes
Guide Sheet #8, Hazardous Waste Management
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Guide Sheet #10, Paint Waste
Guide Sheet #11, Painting
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Guide Sheet #14, Solvents
Guide Sheet #15, Solvent Reuse
Guide Sheet #16, Solvent Recycling
Guide Sheet #17, Solvent Disposal
Guide Sheet #18, Surface Preparation
Guide Sheet #19, Wastewater

If you have comments or ideas for ways to improve these guide sheets, please let us know by calling TAP at (800) 361-4827.

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Preventing Pollution in Collision Repair - Guide Sheet #2

POLLUTION PREVENTION

Collision repair shops deal with many things that can affect the environment. Materials such as paints and solvents can harm the environment and people if they are not properly managed.

State and federal environmental regulations explain what legally can and cannot be done with these materials. The regulations describe how pollution or waste should be controlled, stored, treated or disposed of. A better solution is to prevent the waste or pollution.

What is Pollution Prevention?
Pollution prevention is simply not making the waste or pollutant in the first place. It means doing what we can to reduce the amount and toxicity of the pollution we generate.

Preventing pollution may be something as simple as using a catch-basin to prevent spills or something as complex as redesigning your operation to increase efficiency and reduce waste. Simple things like choosing nonhazardous solvents can protect the environment and reduce the number of environmental regulations you face. Pollution prevention means thinking about the environmental impact of your actions and trying to limit that impact.

Why Prevent Pollution?
When we generate waste or pollution, we must safely and legally manage that waste or pollution. Whether it is household trash or waste from a business, managing wastes costs money. And usually the things we discard are items we bought. A good example is paper towels. We buy them, use them once, then pay again to have them disposed.

If we reduce the amount of waste we generate, we save money. It's as simple as that. Reducing costs is a major reason to prevent pollution. Here are a few others:

- ✔ Improved work environment and worker safety.
- ✔ Reduced liability.
- ✔ Increased efficiency.
- ✔ Fewer regulatory requirements.
- ✔ Better environmental protection.
- ✔ Enhanced marketing and public relations opportunities.

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What Can be Done at Collision Repair Shops?

There are many ways to prevent pollution at collision repair shops. Each of these guide sheets has suggestions on ways to prevent pollution. Here are a few general tips:

√ Make a list of your wastes. Then try to find a way to eliminate each of them. For example, if you throw away paper towels, consider using washable shop towels.

√ Include the cost of disposal when you make purchasing decisions. What looks like the cheapest option may cost more because of disposal or other management costs.

√ Don't buy more than you need. The leftovers may become waste.

√ Purchase the largest practical container (containers usually end up as waste), but don't purchase more than you need.

√ Purchase the least toxic or hazardous product available. Check the material safety data sheets for products you purchase. If the product is toxic or hazardous, ask your supplier for alternatives.

√ Use the oldest items first (first-in, first-out).

√ If you do have excess or unneeded materials, see if your supplier can take them back.

√ Use drip pans and splash guards where spills frequently occur.

√ Fix leaks immediately.

√ Keep work areas clean and well organized to help prevent accidents.

√ Store materials in a way that keeps them from being damaged.

√ Inspect storage areas regularly for leaks.

√ Make sure all items are clearly labeled. Store products in original containers.

√ Store wastes separately and be sure they are properly labeled to make it easier to reuse or recycle them.

√ Store items that could leak in a place where leaks will be contained and easily seen.

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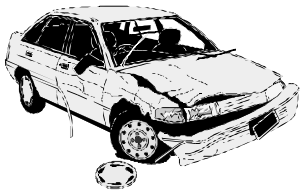
AIR QUALITY PERMITS



Sanding, painting and cleaning may cause air pollution. Most paints and solvents used in collision repair shops contain air pollutants called Volatile Organic Compounds (VOCs). These chemicals help create smog. Many solvents are also Hazardous Air Pollutants (HAPs). These chemicals can harm human health. Welding and sanding can emit metal dust, which also can harm human health.

To protect air quality and human health, the federal, state and some local governments have rules to control air pollution. You need to find out what rules apply to your facility. The Technical Assistance Program (TAP) can help you decide what rules apply to you, send you the needed forms and help you fill them out. Call TAP at (800) 361-4827.

The three major issues affecting you are
✔ Emissions Inventory Questionnaire (EIQ)
✔ Operating Permit
✔ Construction Permit

EIQ
An Emissions Inventory Questionnaire (EIQ) is a form that asks about the equipment you have and the chemicals you use. The information is needed to find out what you must do to protect the air quality in your area. The EIQ is used to calculate the amount of air emissions your shop could have if it operated at full capacity. This is called potential emissions. It is also used to find out your actual emissions for the year. You need to complete an EIQ to find out if you need an operating permit or construction permit.

On the EIQ you will need to describe how jobs flow through your shop and what equipment you have. You will need to include the type and capacity of each paint gun, gun washer, parts washer and any other equipment that uses paints or solvents. You also will need information from your material safety data sheets (MSDS).

Some businesses need to complete an EIQ every year and pay a fee for their air emissions. Other businesses may need to submit one every five years. When you first send in an EIQ, you will be told whether you need to submit EIQs in the future.

If you make changes in your operation, such as switching solvents or paints, you will need to fill out a new EIQ.

Consider using low-VOC paints and solvents to reduce your potential and actual air emissions. Also, avoid using solvents that are HAPs. The MSDS will have this information.

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Operating Permit
Facilities that could emit large amounts of air pollutants must get an operating permit under the Missouri Air Conservation Law. You need an operating permit if your facility has large potential emissions.

Most collision repair shops will not need an operating permit. For help finding out if you need an operating permit, contact TAP or another environmental professional.

Construction Permit
If you need an operating permit, you may need a construction permit before building a new shop or making changes to your existing shop. Adding or changing paint guns, adding on to your building or adding a gun washer are examples of changes that may require a construction permit.

If your shop started construction after May 13, 1982, or if you have made equipment changes since that date, it's possible that you should have had a construction permit. If that's the case, you still need the permit even if the construction is finished.

Contact TAP or another environmental professional for help deciding if you need a construction permit.

Keep in mind that even if you don't need an operating permit now, changes at your shop may increase your potential emissions and cause you to need a permit. It is wise to check with TAP or another environmental professional before you make any changes that could affect your potential emissions.

Local Requirements
Some parts of Missouri have local air quality requirements. If your facility is in St. Louis, St. Louis County, Kansas City or Springfield, the local agency will issue permits. These contacts are

City of St. Louis
Division of Air Pollution Control
(314) 664-7877
St. Louis County
St. Louis County Department of Health
(314) 854-6293
Kansas City
Kansas City Health Department
(816) 983-4475
Springfield
Air Pollution Control Authority
(417) 864-1662
Elsewhere in Missouri
Missouri Department of Natural Resources
Air Pollution Control Program
(573) 751-4817

REMEMBER

If you use paint or solvent, you need to complete an EIQ. You may need an operating permit. If you make changes at your shop, you may need a construction permit.

Use low-VOC solvents and paints. Avoid using solvents that are HAPs.

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EQUIPMENT CLEANING

In many collision repair shops, most of the solvent used is for cleaning paint equipment. In many shops, equipment cleaning is also a good place to reduce solvent use. If you use less solvent, you save money by purchasing less. You also reduce air pollution, protect worker health and cut down on waste.

One way to reduce solvent use is to have a variety of sprayer cup sizes. Using the smallest appropriate sprayer cup will help you avoid having leftover paint. A smaller cup means you use less thinner for cleaning.

Remove as much paint as possible from the paint cup before rinsing with solvent. Some people use a rubber spatula to scrape out the paint. Using Teflon-lined paint cups can make cleaning easier. Scraping out paint uses much less solvent than filling the paint cup with solvent to remove all the excess paint.

Some shops clean their spray guns by filling the spray cup with solvent and spraying the solvent into the booth filters or into the air. This wastes solvent, increases air emissions and can create more hazardous waste than necessary. If your solvent is a listed hazardous waste (see guide sheet #16, *Solvent Disposal*), everything it contacts — paint booth filters, masking, etc. — will be hazardous waste when disposed. Instead, spray into an enclosed gun cleaning station. Some shops simply spray the solvent into a bucket or another type of container. Then you can reuse the thinner. Also, use a broom straw, cleaning broach or a soft-wood toothpick to clear plugged guns.

Consider using an enclosed gun washing system. A gun washer is similar to a dishwasher. It is designed to hold spray guns and related equipment and cleans by circulating solvent inside a closed chamber. These enclosed gun washing systems reduce employee time spent cleaning and exposure to hazardous solvents. Also, less cleaning solvent is lost to evaporation. The cost of the gun washer may be offset by savings in labor costs and solvent purchases.

If your workload is large enough, you may want to use two gunwashers. The first washer can be used for the first rinse and the second for the final cleaning. Once the solvent in the first washer is too dirty for use, it can be recycled or disposed and the second can become the primary rinse.

Line cleaning is another area to look at. One way to improve line-cleaning efficiency is to introduce turbulence into the solvent going

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through the line during cleaning. Equipment that forces alternating pulses of solvent and compressed air is one way to do this. Payback on this equipment can come from increase production output through more rapid color changes and from decreased solvent use.

When you must use solvent-based cleaners, use the smallest amount that will do the job.

There are estimates that as much as 40 percent of solvents are lost due to evaporation, equipment leaks, spills or inappropriate use. Check regularly for leaks, drips and spills. Keep solvent containers closed when not in use.

If possible, try to do your painting in a sequence that will reduce the amount of cleaning between jobs.

Another way to protect the environment and the people in your shop is to use a solvent with a low VOC content. VOCs are "volatile organic compounds," the chemicals in a solvent that get into the air and can harm human health and the environment. Check your Material Safety Data Sheet (MSDS) for information on the amount of VOCs. Always look for the material with the lowest VOC content that will work.

You should also look for solvents that are nonhazardous. Trichloroethylene, tetrachloroethylene (or perc), methylene chloride, xylene, acetone, methyl ethyl ketone and toluene are all regulated as hazardous waste. Also, if the solvent has a flash point of less than 140° F, it is a hazardous waste. Check your MSDS, ask your supplier or contact the manufacturer to find out if your solvent is a hazardous waste. If it is, ask your supplier for nonhazardous alternatives.

REMEMBER

Solvents used in equipment cleaning may cause air pollution. They also may be hazardous waste.

Use solvents with the lowest percentage of VOC possible.

Ask your supplier for nonhazardous solvents.

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FLUORESCENT BULBS

Your paint shop may use fluorescent lights for overhead lighting. You might also use special fluorescent bulbs for curing paint. Fluorescent lights typically use less energy and cost less to operate than incandescent lights. However, fluorescent bulbs may contain toxic metals such as mercury, cadmium and lead. Unbroken lamps pose no threat to human health and the environment. However, when fluorescent bulbs are broken, people may be exposed to toxic levels of mercury vapor and other metals which can be easily inhaled.

The Missouri Department of Natural Resources (DNR) encourages lamp recycling to protect human health and to limit the amounts of toxic heavy metals entering the environment. Talk to your bulb supplier about recycling options. Also, ask your supplier about low-mercury bulbs.

If your business generates one or two lamps infrequently, you may dispose of these in a Missouri sanitary landfill. Before disposal, put the lamp in the box the replacement lamp came in. Put the box in a plastic bag and secure the bag before putting it in the trash dumpster. This will help keep the bulb from breaking and will help protect you and the trash hauler.

Nonhazardous Lamps

If you know your fluorescent lamps are non-hazardous you may send them to a Missouri sanitary landfill or to a lamp recycler. You should contact the landfill operator for permission before disposal. The landfill operator can refuse any waste. The landfill may ask you to fill out a special waste disposal request before accepting the material.

Lamps Sent for Recycling

Businesses in Missouri may send their unbroken lamps to an out-of-state recycler or to a recycler in Missouri that has a valid resource recovery certification from DNR. If unbroken lamps are sent for recycling, you do not need to use a licensed hazardous waste transporter in Missouri. You may use a hazardous waste manifest or other shipping papers to record and track your shipments of unbroken lamps.

If you plan to send hazardous lamps to an out-of-state recycler, contact the environmental agencies in the states through which the lamps will travel for their state requirements. Other states may require use of a licensed hazardous waste transporter and a manifest for shipments to a recycler even though Missouri does not.

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Hazardous Lamps

Your fluorescent bulbs are subject to hazardous waste regulations if you deliberately crush them. They are also subject to these regulations if they are identified as hazardous and are sent to a facility for treatment, storage or disposal. See guide sheet #7, *Hazardous Waste*, for more information.

There are two ways to determine if lamps are hazardous.

1. Test the waste. The test used to find out the toxicity of fluorescent lamps is the Toxicity Characteristic Leaching Procedure (TCLP). If the level of any metal is at or above the acceptable level, the lamps are hazardous waste. Acceptable levels are published in Title 40 of the *Code of Federal Regulations* section 261.24 as follows:

   Mercury - 0.2 milligrams per liter (mg/l)
   Cadmium - 1 mg/l
   Lead - 5 mg/l

2. Apply knowledge of the hazardous characteristic. Data from lamp manufacturers shows that lamps old enough to be waste in 1996 are likely to be hazardous waste. If you wish, you may assume the lamps are hazardous to avoid the costs of testing. However, your disposal firm may ask for test results before taking your lamps.

The hazardous waste regulations you must meet depend on how much waste you generate. It may be helpful to know that 350 of the standard four-foot long lamps weigh about 220 pounds. If you have over 220 pounds of hazardous waste in a month or at any one time you are regulated as a small quantity generator. See guide sheet #7, *Hazardous Waste*, for more information.

REMEMBER

Fluorescent bulbs may be hazardous waste.

If you generate one or two waste fluorescent bulbs infrequently, you may send them to a Missouri sanitary landfill. Contact the landfill first.

Do not break fluorescent bulbs.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

- √ Purchase low-mercury bulbs.
- √ Protect bulbs from breakage.
- √ Recycle bulbs.

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GLASS

While repairing vehicles, collision repair shops often have waste glass from windshields or side windows. This glass is not regulated differently from other wastes; it can be discarded as nonhazardous waste at a landfill. But throwing the glass away costs money and uses up valuable resources. A better option is to recycle the glass.

In Missouri there are presently few recyclers of automotive glass. To find recyclers in your area,

- ✓ check the yellow pages of the phone directory.
- ✓ contact your local solid waste or public works office.
- ✓ ask your trade association.
- ✓ check with other businesses in your area.
- ✓ call your newspaper. In some areas, the newspaper publishes lists of recyclers.

If you store glass before recycling, keep it apart from other recyclable materials. Keeping other materials from mixing with the glass makes recycling easier. It may also increase the price the recycler pays or reduce the fee the recycler charges.

Keep the glass in a covered storage area to help prevent the waste pile from becoming a mosquito breeding area.

If you plan to dispose of automobile glass, contact your landfill and waste hauler to see if they have any special handling requirements.

You can also reduce the amount of waste glass by repairing small defects instead of replacing the entire glass.

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HAZARDOUS WASTES

Note: The federal requirements for hazardous waste can be found in the *Code of Federal Regulations*, Title 40, Part 260 through Part 280 (40 CFR 260-280). The Missouri Hazardous Waste Law is in the R*evised Statutes of Missouri* (RSMo), Sections 260.350-260.552. The hazardous waste rules are in the *Code of State Regulations*, Title 10, Division 25 (10 CSR 25). To get information on the regulations, call the Missouri Department of Natural Resources (DNR) at (800) 361-4827 or the federal government's Superfund/RCRA Hotline at (800) 424-9346.

Some activities at your collision repair shop may result in the generation of hazardous waste. It is very important that you find out if your wastes are hazardous and that you follow the law when managing the wastes.

What is a Hazardous Waste?

A waste is a material that you no longer use and will discard. It can be a solid, liquid or gas. A waste is hazardous if it has properties that could be dangerous to human health and the environment. Solvents and paints are examples of wastes that could be hazardous.

It is **your** responsibility to find out if your waste is hazardous. A waste is hazardous if
✔ It is listed as a hazardous waste in the federal regulations;
✔ It exhibits a hazardous characteristic;
✔ It is a hazardous waste by Missouri law; or
✔ It is a mixture of a listed hazardous waste and any other waste.

Listed Hazardous Waste - The federal government publishes lists of hazardous wastes. There are four different lists: The F list, the K list, the P list and the U list. Wastes that are on the P list are called "acutely hazardous" and are regulated more strictly than the other types.

Characteristic Hazardous Waste - Some wastes that are not on the lists may still be regulated hazardous wastes because they have characteristics that make them hazardous. There are four characteristics:

Ignitable - A waste with a flashpoint of less than 140° F, or solids that catch fire easily and burn so rapidly they create a hazard. Some solvents are ignitable.

Corrosive - A waste with a pH less than or equal to 2.0 or greater than or equal to 12.5. An example is battery acid.

Reactive - Wastes that are normally unstable, react violently with water, can explode or release poisonous gases.

Toxic - Wastes with high concentrations of certain organic chemicals, heavy metals or pesticides when tested by the Toxicity Characteristic Leaching Procedure (TCLP). The chemicals considered toxic are included on a list in the federal regulations.

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Missouri-specific Hazardous Waste - An individual state can regulate wastes as hazardous even if they are not on the federal list. For example, in Missouri certain dioxin wastes are regulated at smaller quantities than in the federal rules.

Mixed Waste - If you mix any waste with a waste that is on the F, P, K or U list, all of it is hazardous, even if there is only a very small amount of listed hazardous waste in the mixture.

Is Your Waste Hazardous? To find out if your waste is hazardous, check to see if it is on the lists of hazardous wastes or if it is a hazardous waste in Missouri. If it is not, you need to find out if it exhibits one or more of the hazardous characteristics. Check the material safety data sheet (MSDS) or contact your supplier for information.

If you are unsure if your waste is hazardous, you will need to have it tested in a laboratory. Contact DNR at (800) 361-4827 for help with this.

Managing Hazardous Wastes. There are very specific requirements for managing hazardous waste from your business. The requirements you must meet depend on what and how much waste you generate. You need to know how much acutely hazardous waste (P-listed) and non-acute hazardous waste you generate each month. You also need to know how much of each of these types of waste you accumulate at any one time.

Use the following information to determine your generator status. See guide sheet #8, *Hazardous Waste Management,* for more information on how to label, store and dispose of your hazardous waste.

What Type of Generator Are You?

There are three types of generators: Large Quantity Generator (LQG), Small Quantity Generator (SQG) and Conditionally Exempt Generator (CEG). Here are some general guidelines to help you decide what type of generator you are:

If you generate in one month or accumulate at any one time . . .

✔ more than 1 kg (2.2 pounds) of acutely hazardous waste you are an LQG.
✔ 1,000 kg (2,200 pounds) or more of non-acute hazardous waste you are an LQG.
✔ more than 100 kg (about 220 pounds), but less than 1,000 kg (2,200 pounds) of non-acute hazardous waste AND less than 1 kg of acutely hazardous waste you are an SQG.
✔ no more than 100 kg (220 pounds) of non-acute hazardous waste AND less than 1 kg of acutely hazardous waste you are a CEG.
✔ In Missouri, anyone generating one gram or more of dioxin waste (2,3,7,8-tetrachlorodibenzo-p-dioxin) is an LQG.

If you are a SQG or LQG you must register with DNR and get a generator identification number. You also must follow regulations on storage, transport, recordkeeping and reporting. Call DNR for more information.

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HAZARDOUS WASTE MANAGEMENT

If you generate hazardous waste — and most collision repair shops do — there are requirements for how you manage that waste. The rules you must follow depend on how much waste you generate. This guide describes the main requirements. For information on how to decide if your waste is hazardous, see guide sheet #7, *Hazardous Waste*. Use the information from that guide sheet to decide if you are a Large Quantity Generator, Small Quantity Generator or Conditionally Exempt Generator.

Containers

- ✔ Hazardous waste containers must be ingood condition. If a container leaks, transfer waste to a new container.
- ✔ Don't let rainwater accumulate on top of the container.
- ✔ Keep containers closed and use self-closing funnels when adding waste.
- ✔ Use containers that are compatible with the waste. For example, use HDPE (high-density polyethylene) plastic containers for corrosive wastes.
- ✔ Never place incompatible wastes, such as wastes that react with each other (acids and bases) in the same container.

Storage

- ✔ Keep aisle space between container rows to allow inspection for leaks and damage.
- ✔ Store ignitable and reactive wastes at least 50 feet from property boundaries.
- ✔ Store containers of incompatible wastes in separate areas.
- ✔ There may be limits on how long you store your waste.

Labels

- ✔ Label every container with the type of waste and whether it is hazardous or non-hazardous.
- ✔ Include EPA hazardous waste numbers or Missouri waste code numbers.
- ✔ Include the date waste was first placed in the container.
- ✔ Include your business's name and address.
- ✔ Use the following words on labels for hazardous wastes:

HAZARDOUS WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
If found, please contact the nearest police or public safety authority or the U.S. EPA
(Your business's name and address and manifest document number)

Transport and Disposal

- ✔ Make sure your hazardous waste transporter has an EPA identification number and a Missouri Hazardous Waste Transporter License.

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✔ Make sure the place receiving your waste has EPA identification numbers and the necessary state permits.
✔ Use manifests for hazardous wastes shipped off-site.

Inspections and Recordkeeping
✔ Inspect containers at least once a week and keep a written log of inspections.
✔ Keep training and inspection records, manifests, shipping receipts and records of lab tests for three years.
✔ Keep land disposal restriction forms for five years.

Training
✔ Train all employees to identify, reduce and properly handle wastes.
✔ Train new employees before they handle hazardous waste.

Notify DNR
✔ If your business is a small or large quantity generator, register as a generator with the Missouri Department of Natural Resources (DNR) to get an EPA and Missouri generator identification number.

Emergency Preparedness
✔ Notify police departments, fire departments and local hospitals. They need to know what hazardous wastes are on your property.
✔ Designate an emergency coordinator. This person must know what to do in case of a fire, spill or other emergency and must be on the premises or on call 24 hours a day.

Contingency Plans
Large quantity generators must have a written plan for handling emergencies that includes the following. Even if you are not a large quantity generator, having a written plan is a good idea.
✔ Response arrangements with police, fire, hospitals and emergency response contractors.
✔ Emergency coordinator's address and phone number(s).
✔ On-site emergency equipment descriptions and locations.
✔ Evacuation plan and routes, including a site diagram.

Post Emergency Information
Post the following information near every telephone:
✔ Fire department phone number.
✔ Emergency coordinator's name and phone number.
✔ Locations of fire alarms and extinguishers.
✔ Locations of spill control materials.

REMEMBER

You must decide if your waste is hazardous and manage it correctly.

Find ways to eliminate or reduce hazardous wastes. This will reduce the number of requirements you must meet. See the pollution prevention suggestions on other guide sheets, particularly those dealing with paints, solvents and equipment cleaning.

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PAINTING

Mixing and applying primers, paint and topcoats are key tasks at collision repair shops. The way these tasks are done will affect how much paint and other materials you use and how much waste you make. It is good for the environment and good for business to reduce the amount of these chemicals used and to reduce waste.

Paints, primers and topcoats (paints) usually contain chemicals that cause air pollution. Many of them are also hazardous wastes. If you use less of these coatings, less air pollution is made. This will help the environment and employee health. It can also reduce the number of environmental regulations you have to follow.

Several things affect the amount of paints used and waste made during surface coating. The skill of the operator, the type of coating applied and the type of spray equipment used are all factors. Differences caused by the painter's skill and technique are often greater than the type of coating or gun used. Investing in training for the painters in your shop can help you save money as well as ensuring a good quality product.

Here are some ideas for reducing the amount of paints used and the amount of waste made:

- ✔ Use the correct gun setup for the coating to be used and for the size of the area to be covered. Gun settings include fluid tip size, flow rate setting, the air cap type and pressure (psi), and the paint cup psi in pressure cup systems.
- ✔ Keep records of the gun type and settings for specific jobs to reduce variations.
- ✔ Use paints with low lead, cadmium and chromium content. Using materials with these or other toxic metals will usually make your paint filters hazardous waste. Check the Material Safety Data Sheet (MSDS) or ask your supplier for nonhazardous paints.
- ✔ Use neutral color primers and sealers to allow easy topcoat coverage.
- ✔ Mix paint on-site if possible and mix only the amount needed. As little as one excess pint per day equals approximately $3,000 added cost per year.

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- ✔ Keep records of the volumes of paint needed for specific jobs. Estimate the quantity of paint mixed based on these records.

- ✔ Apply only the number of coats needed for adequate coverage.

- ✔ Consider using liquid overspray masking instead of plastic or paper. It can be sprayed onto car surfaces with existing spray equipment and is removed with water, which normally can be treated with other wastewater. However, if your shop is on a septic system this is probably not advisable since you will need to capture your wastewater and dispose of it elsewhere. See guide sheet #18, *Wastewater,* for more information.

- ✔ Use high efficiency spray equipment. Standard spray guns can waste as much as 80 percent of the paint used. High-efficiency spray guns such as high-volume, low- pressure (HVLP) and electrostatic guns can reduce overspray by as much as 75 percent. These guns still depend on the operator skill level and technique. Proper training for their use is critical.

- ✔ Consider installing a computerized mixing system. These systems can accurately mix paint formulas down to very small quantities, eliminating mismatches and reducing the amounts of wasted paint. Payback for such systems can be less than one year, depending on the volume of painting done.

REMEMBER

Using only the amount of paint needed saves money and protects the environment.

The skill of the painter is key to reducing paint used and paint waste. Other factors are type of paint and painting equipment.

Use nonhazardous primers, paints and topcoats whenever possible.

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PAINT WASTE

Waste paint may be regulated as hazardous waste. Some paints contain metals such as lead, cadmium, barium or chromium that cause the paint to be toxic hazardous waste. Your paint may also be an ignitable waste, which means it will catch on fire at less than 140° F. The temperature at which something catches on fire is called the flash point.

The material safety data sheet (MSDS) for the paint should list the flash point. It should also list toxic metals if they are present in significant amounts. Even if the MSDS does not list any toxic metals, the paint could still be hazardous waste. Check with your supplier or manufacturer. The regulated levels of toxic metals are

Barium 100 mg/l (milligrams per liter)
Cadmium 1.0 mg/l
Chromium 5.0 mg/l
Lead 5.0 mg/l

If the concentration of metals in your paint is at or above these levels, the paint waste is hazardous waste.

If the MSDS, the supplier or some other authority cannot tell you whether the waste paint is hazardous, you will need to have the paint tested before disposal. The test for toxic metals is called the Toxicity Characteristic Leaching Procedure (TCLP).

See guide sheet #7, *Hazardous Waste*, for more information. You need to test a representative sample of the waste. Be sure to test again if the paint formulation changes.

Keep paint waste separate from solvent waste. If you mix paint waste with a listed hazardous waste solvent, the mixture will be hazardous waste. Some common hazardous waste solvents include methyl ethyl ketone, toluene, trichlorethylene, methylene chloride, xylene, acetone and others.

Try to avoid having waste paint. Computerized mixing systems can help assure accurate color matching. Using the smallest paint cup possible reduces the amount of paint left in the cup. If you have off-spec paint, ask your supplier to take it back.

Try to use up paint rather than disposing of it. Some shops mix small amounts of different colors to use as an undercoat.

Disposing of Hazardous Paint Waste

If your waste paint is a hazardous waste, you need to figure out how much you generate. The rules you must follow depend on how much waste you generate. Store hazardous waste in a closed container labeled with the words "Hazardous Waste" and the date waste was first placed in the container.

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Anyone picking up your hazardous waste for disposal or recycling must have a Missouri Hazardous Waste Transporter License. You may need a generator identification number and you may have to complete a hazardous waste manifest. See guide sheet #8, *Hazardous Waste Management,* for more information.

There are several types of facilities that can accept hazardous paint waste. Always check to be sure the facility receiving your waste can legally accept it. To get a list of certified resource recovery facilities (recyclers) or hazardous waste disposal facilities in Missouri, contact TAP at (800) 361-4827.

Disposing of Nonhazardous Paint Waste
If your paint waste is not a hazardous waste, you can dispose of it with your trash if the paint is dry. Landfills in Missouri cannot accept liquids. Check with your landfill to see if they will accept the waste.

To dry the nonhazardous paint, mix absorbent material into it to soak up all the liquid. Kitty litter and sawdust are good absorbents that are inexpensive.

You may have heard that you can dry the paint by letting it evaporate. This is never a good idea and may be illegal. Allowing paint to evaporate like this causes air pollution and poses a risk to anyone around the drying paint. Using an absorbent to dry it is safer and is inexpensive.

Do not put paint or any other chemicals down the drain unless you have permission from the wastewater treatment plant.

Never pour paint or any other waste onto the ground. Doing that can seriously harm the environment and you. Also, there are penalties for illegally disposing of waste.

REMEMBER

Your paint may be a hazardous waste. You must find out if it is.

Keep paint waste separate from other wastes.

Be sure that anyone taking your hazardous waste is legally able to do so.

Never pour paint or any other wastes onto the ground.

POLLUTION PREVENTION
Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:
√ Ask your vendor for paints that are not hazardous waste.
√ Mix only the amount of paint needed. Use all the paint you mix.

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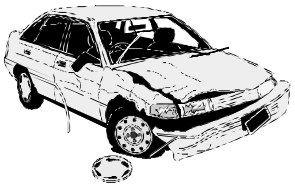
PAINT BOOTH FILTERS



Used paint booth filters may be hazardous waste. Paint and solvent captured by a filter can cause the used filter to be a hazardous waste depending on the paint and solvents you use and how much you paint.

Usually filters are hazardous because they contain a toxic metal (usually from the paint), they are ignitable (can burst into flames) or they are contaminated with a "listed" hazardous waste (often from spraying solvent into the filter when cleaning spray guns).

To decide if your paint booth filter is hazardous ask yourself the following:

- ✔ Does the Material Safety Data Sheet (MSDS) show that the paint or other chemicals going into the filter contains toxic metals (particularly cadmium, lead, barium or chromium) or other toxic materials? If the answer is yes, it is very possible that your filters are hazardous waste. You can assume your filters are hazardous or you can do testing.

- ✔ Can your supplier or manufacturer provide information to you that says your paints or other chemicals going into the filters contain no toxic material? If the answer is no, you should find out the levels from them or do testing.

- ✔ Is the paint or other chemicals going into the filters a "listed" hazardous waste? If the answer is yes, the used filters will be hazardous waste. Listed hazardous waste solvents include trichloroethylene, toluene, xylene, acetone, methyl ethyl ketone, methylene chloride and others.

- ✔ Could the used filters spontaneously combust (catch on fire without anyone or anything lighting them)? If the answer is yes, the filters are hazardous waste.

Some people dip their used filters in water before storing them to prevent fires. Others spray them with water. If the filters cannot catch fire, they are not ignitable hazardous waste. They could still be hazardous waste for another reason (toxic or listed hazardous waste contamination). If your filter contains a listed hazardous waste and you dip it into water, the water you dipped it in becomes hazardous waste.

Testing Paint Booth Filters

To test your paint booth filter, a laboratory will need to measure the flash point, determine if the filter can spontaneously combust and do a Toxicity Characteristic Leaching Procedure (TCLP). The TCLP will only need to test for the toxic chemicals that you expect to find in your paint filter.

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The list of regulated toxic chemicals is in the *Code of Federal Regulations*, 40 CFR 261.24. Call the Missouri Department of Natural Resources (DNR) if you need help finding this list.

To find a laboratory to test your filters for hazardous characteristics, check the yellow pages, ask your vendor or check with your trade association. Be sure the filter is full when it is tested. Once you test the filters, you need to test them again when your process changes, for example if you change paints or solvents.

Managing Hazardous Waste

If your filters are hazardous waste, you will need to figure out how much waste you generate. The regulations you must follow depend on how much waste you generate. A few of the basic requirements are discussed here. See guide sheet #7, *Hazardous Waste* and guide sheet #8, *Hazardous Waste Managemen*t, for more information.

Properly store and dispose of used filters. Store them in a closed container clearly marked with the words "Hazardous Waste" and the date you first put waste into the container. Be sure you store them in a way that will prevent fires.

Anyone transporting your hazardous waste must have a Missouri Hazardous Waste Transporter License. There are several types of facilities that can accept hazardous paint booth filters. Always check to be sure the facility receiving your waste can legally accept it.

To get a list of certified resource recovery facilities (recyclers) or hazardous waste facilities in Missouri, contact DNR at (800) 361-4827.

REMEMBER

Paint booth filters may be hazardous waste. You must find out if yours are.

If you clean your guns by spraying a listed hazardous waste solvent into your paint booth or filter, your filters become hazardous waste. Spray solvent into a container and reuse it.

If your paint booth filters are hazardous waste, you must follow hazardous waste regulations. See guide sheet #7, *Hazardous Waste*.

Store used paint booth filters safely to prevent fires. If you dip them in water, realize that the water may become hazardous waste.

Use nonhazardous paints and solvents.

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PLASTIC WASTE

Autobody repair shops often remove damaged plastic parts from vehicles. These wastes are not regulated differently from others. The plastic can usually be discarded as nonhazardous waste at a sanitary landfill. But throwing the waste away in the landfill can cost you money and uses up valuable resources. A better option is to reuse the parts or recycle the plastic.

There are several good sources of information on recyclers. To find recyclers in your area,

- ✔ check the yellow pages of the phone directory.
- ✔ contact your community's solid waste or public works office.
- ✔ ask your trade association.
- ✔ check with other businesses in your area to ask if they know of recyclers.
- ✔ call your newspaper. In some areas, the newspaper publishes lists of recyclers.

If you store plastic items before recycling, store them apart from other recyclable materials.

Keeping materials separated makes recycling easier and can sometimes increase the price the recycler pays or reduce the price the recycler charges. Keep the recyclables in a covered storage area to help prevent the waste pile from becoming a mosquito breeding area.

If you plan to dispose of automobile parts, contact your landfill and waste hauler to see if they have any special handling requirements.

Never burn plastic or any other waste from your business.

Be sure all of your waste goes to a place legally able to accept it. Never try to dispose of waste on your own property. Doing that is bad for the environment and can make it difficult to sell your property. There are serious penalties for illegal waste disposal.

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REMEMBER

Be sure all of your waste goes to a place legally able to accept it.
Do not burn wastes from your business.

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Preventing Pollution in Collision Repair - Guide Sheet #13

SCRAP METAL

Collision repair shops deal with a variety of scrap metals. The Missouri Department of Natural Resources (DNR) encourages recycling of scrap metal. Recycling scrap metal saves energy and landfill space, reduces air pollution, water use, mining waste and consumer waste. Also, recycling metal saves money and natural resources.

Some vehicle parts such as water pumps, alternators, master cylinders and carburetors may be sold to parts remanufacturers. Remanufacturing saves even more resources than recycling. Keep parts to be remanufactured separate from other scrap metal.

Some scrap metal recyclers will pay more for catalytic converters, so you may want to keep them separate from other scrap metal. Catalytic converters from the exhaust systems of newer automobiles contain platinum, a metal with a higher value than steel.

Scrap metal recyclers usually require the scrap metal to be sorted by type. Iron and steel should be separated from other types of metal such as aluminum, brass and copper. Keep lead, such as tractor wheel weights and wheel balancing weights, separate from other metals.

If you store scrap metals outside, you will need to be particularly careful. What looks like a storage pile to you may look like a dump to someone else. To avoid potential problems, be careful that other wastes are not mixed with scrap metal and set up a regular schedule for removal. Check on city and county ordinances that may have requirements for storing materials outside.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Remove parts for remanufacture when possible.
√ Keep catalytic converters that contain platinum in a separate area.
√ Sort metals by type and schedule regular removal of scrap metal.

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SOLVENTS

Waste solvents used in paint equipment cleaning make up a big part of the hazardous wastes from collision repair shops. You can help protect the environment, protect workers in your shop and save money by reducing the amount of solvent you use and by reusing or recycling your solvent.

Air Pollution From Solvents
Many solvents contain Volatile Organic Compounds (VOCs). These are chemicals that get into the air and can harm people and the environment. The Material Safety Data Sheet (MSDS) will have information on the amount of VOCs in the products you buy. Always try to use the material with the lowest percentage of VOCs possible. There are regulations about solvent metal cleaning for both the St. Louis and Kansas City areas. Missouri has rules to protect air quality. The types of rules that apply to your shop depend on the type and quantity of paints and solvents you use, as well as the size of your operation. See guide sheet #3, *Air Quality Permits* for more information.

Waste Solvent
Many waste solvents are hazardous wastes. Some used solvents and still bottoms are on a list of hazardous wastes called the F list. Some unused solvents are on the U list.

Common hazardous waste solvents include trichloroethylene, tetrachloroethylene (perc), methylene chloride, xylene, acetone, methyl ethyl ketone, toluene and others.

Some used solvents are hazardous because they are ignitable, toxic, reactive or corrosive. If the waste solvent has a flash point of less than 140° F it is an ignitable hazardous waste. The flash point is the temperature at which the solvent will catch on fire.

Waste solvent should be reused, recycled on-site, recycled off-site or, as a last resort, disposed of as a hazardous waste. See these guide sheets for more information

#7 *Hazardous Waste*
#8 *Hazardous Waste Management*
#14 *Solvent Recycling*
#15 *Solvent Reuse*
#16 *Solvent Disposal.*

Reducing Solvent Waste
Solvents can be expensive to purchase and to dispose. It makes good sense to try to reduce the amount of solvent you use. Often, the solvent that you use can be reused or recycled, which means you can purchase less new solvent. When you reduce the amount of solvent you use, you save money and you protect the environment.

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Here are some ideas for reducing solvent use at your shop:

- ✔ Keep solvent containers, parts washers and solvent sinks closed. Any solvent that evaporates at your shop is solvent you paid for and can't use. Some people estimate that as much as 40 percent of solvents are lost due to evaporation, equipment leaks, spills or inappropriate use.
- ✔ Set up and follow a maintenance schedule for equipment. This can prevent leaks.
- ✔ Check regularly for leaks, drips and spills. Repair leaks and clean up spills right away.
- ✔ Schedule paint jobs to reduce the need to clean between jobs.
- ✔ Use slightly dirty solvent for the first rinse of equipment.
- ✔ Scrape the leftover paint out of the paint cup before you rinse it.
- ✔ Use the smallest spray cup that will work so you won't have a lot of leftover paint. You also won't need to use as much solvent to clean a small spray cup.
- ✔ When you clean spray guns, spray the solvent into an enclosed area or container so it can be captured and recovered.
- ✔ Think about buying or leasing an automatic gunwasher. These systems work like household dishwashers. They can reduce employee time spent cleaning, reduce solvent evaporation and reduce exposure hazards.
- ✔ Clean guns and nozzles immediately after use. This saves time and solvent.
- ✔ Keep solvent containers, parts washers and solvent sinks closed. This is so important the list begins and ends with it.

REMEMBER

Your solvent may be hazardous waste.

Ask your supplier if nonhazardous solvents are available.

Solvent that evaporates is solvent you paid for and can't use. Keep containers tightly closed and in good condition.

Use the solvent with the lowest VOC content possible.

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Preventing Pollution in Collision Repair - Guide Sheet #15

SOLVENT REUSE

Many collision repair shops find that one of their biggest expenses is for solvents. Many cleaning solvents and thinners are regulated as hazardous waste. They also may contain chemicals that can cause air pollution. Reusing solvent can help protect the environment and save money.

Reusing Solvent

It can be easy and inexpensive to reuse your solvent. You can use the dirty solvent as a first rinse for dirty equipment. Another method is to settle out the solids in your used solvent. Put the used solvent in a container and leave it undisturbed until the solids settle out. Siphon off the liquid solvent with a drum pump. Filtering equipment is also available for used solvent. If you filter your solvent it is considered recycling and other rules may apply. See guide sheet #15, *Solvent Recycling.*

Your reused solvent may not be suitable to use as a paint thinner, but you can use it for cleaning. If you need to, use a small amount of fresh solvent as a final rinse.

Eventually your solvent may be too dirty to reuse. When this happens, you should recycle it. Recycling, like reuse, saves money and helps protect the environment. Dispose of used solvent only as a last resort.

If you need to recycle or dispose of your used solvent, you must find out if it is hazardous waste and follow the requirements for managing the waste. These guide sheets have more information:

#7 *Hazardous Waste*
#8 *Hazardous Waste Management*
#13 *Solvents*
#15 *Solvent Recycling*
#16 *Solvent Disposal.*

Permits for Reusing Solvent

You do not need a permit from the Missouri Department of Natural Resources (DNR) if you simply allow solids to settle out of your used solvent at your shop. However, if you filter your used solvent or process it in some other way there may be hazardous waste rules that apply. Also, the material (sludge) that settles out may be hazardous waste.

Storing Used Solvent

If your used solvent is hazardous waste, you must store it according to hazardous waste rules even if you plan to reuse it. Store hazardous waste in a closed container labeled with the words "Hazardous Waste" and the date you first put waste in it. The length of time you can store the waste depends on how much waste you generate. See guide sheet #8, *Hazardous Waste Management* for more information.

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Managing Sludge

Usually the sludge that settles out of used solvent is hazardous waste because it is ignitable or toxic or because the solvent is a listed hazardous waste.

If the waste has a flash point of less than 140° F, it is ignitable hazardous waste. This means the waste will catch on fire at less than 140° F. If it contains toxic materials (usually metals like chromium or lead) over certain levels it is a toxic hazardous waste. If the solvent is on one of the lists from the federal government of materials regulated as hazardous waste, the sludge is a listed hazardous waste. Solvents on this list include trichlorethylene, tetrachloroethylene (perc), methylene chloride, xylene, acetone, methyl ethyl ketone (MEK), toluene and others.

The material safety data sheets (MSDS) for your solvents and paints should indicate the chemicals (such as toluene, etc.), the flash point and any toxic chemicals present in large quantities. You can check with your solvent vendor to find out if the solvent is hazardous waste. If it is, you can assume the sludge is hazardous. If the solvent is not hazardous, the sludge may still be hazardous because of contaminants in it.

If you don't know from your MSDS or some other authority that your sludge is nonhazardous, you will need to have it tested. A laboratory will need to measure the flash point and do a Toxicity Characteristic Leaching Procedure (TCLP).

There are many laboratories that will do these tests. Check your phone book, ask your vendor or contact your trade association for suggestions. The TCLP will only need to test for the chemicals that you expect to find in your waste.

If you know your waste is nonhazardous, either by your own knowledge or by testing, it can go in your regular trash only if it is dry. Liquid nonhazardous waste can be dried out by mixing it with an absorbent like kitty litter. Always check with your local sanitary landfill officials to make sure they will accept this waste.

REMEMBER

Reduce the amount of solvent you use. Reuse your used solvent if possible. Recycling is the next best option.

Sludge or filters that come from cleaning up your solvent may be hazardous waste.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. To prevent pollution, look for ways to reduce the amount of solvent you use and ask your supplier for non-hazardous solvents and paints.

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SOLVENT RECYCLING

Whether you recycle your solvent on-site or have someone pick it up for recycling elsewhere, recycling your used solvent helps protect the environment and can save money.

You need to find out if your used solvent is regulated as hazardous waste. You can find information on how to do that in guide sheet #7, *Hazardous Waste* and guide sheet # 13, *Solvents*.

This guide sheet deals with recycling hazardous waste solvent. If your used solvent is not hazardous waste, check with your recycling equipment vendor for information on managing wastewater and waste from the recycling unit. You can also call the Missouri Department of Natural Resources (DNR) for help.

On-Site Recycling

Most on-site recycling of solvent is done with a distillation unit called a still. Used solvent is put in the still and heated to the boiling point. The solvent vapor is then cooled, producing nearly pure solvent. There are also recycling units that filter the used solvent. Most recycled solvent is used for gun washing.

To figure the cost savings from on-site recycling, consider the cost of new solvent and the cost of off-site recycling. In general, shops that generate 50 gallons of waste solvent per month will get their money back on a small still in just over one year.

You need to contact DNR before you begin recycling your solvent on-site. For small amounts, you need to notify the DNR's Hazardous Waste Program at P.O. Box 176, Jefferson City, MO 65102. Send a letter that includes your name, the name and location of your facility, the wastes being recovered and the approximate quantity of waste recovered each year.

If you recycle more than 1,000 kilograms (2,200 pounds) on-site in a month, you must send an application to DNR for a resource recovery certification. Contact DNR to get an application form. There will be a $100 application fee.

After the solvent is distilled, there will be some settled residue called still bottoms. This material is a hazardous waste. If your recycling unit filters used solvent, the used filters may also be hazardous waste. Store the waste still bottoms or filters in a closed container labeled with the date you first put the waste in the container and the words "Hazardous Waste."

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All hazardous wastes from your solvent recycling must be properly handled and disposed. See guide sheet #8, *Hazardous Waste Management*, for more information.

Some recyclers have mobile recycling services. They bring equipment to your shop and recycle your solvents there. These businesses must have resource recovery certification in Missouri. If you use this type of service, ask the recycler to give you a copy of the approval letter from DNR.

Off-site Recycling

You may choose to recycle waste solvents off-site with a commercial recycler. Some businesses will transport and recycle your solvent. Other recyclers offer a solvent tank maintenance service. They will come to your shop, remove the solvent and sludge from your tank and replace it with clean solvent. Solvent recycling facilities in Missouri must have resource recovery certification.

If you send your waste solvent off-site, whether for recycling or disposal, you need to follow all hazardous waste requirements. The company that transports your waste solvent must have a Missouri hazardous waste transporter license. Other requirements depend on how much waste you generate. In most cases you will need to get a generator identification number from DNR and use a manifest when you ship the waste off-site. Be sure you get a copy of the completed manifest.

In some cases you can have a contract with your solvent recycler instead of using a hazardous waste manifest. Small quantity generators of hazardous waste can do this. See guide sheet #7, *Hazardous Waste*, to learn what type of generator you are. The agreement with your recycler must include the type of waste and frequency of shipments. The waste must be transported to the recycling facility and the recycled material brought back to you in the recycler's own vehicle.

REMEMBER

If you recycle your hazardous waste solvent, you need to notify DNR. You may need a resource recovery certification.

If someone else recycles your hazardous waste solvent, that person needs a resource recovery certification from MDNR.

Still bottoms and filters from recycling solvent usually are hazardous waste. Store them in closed, labeled containers before disposing of them with a facility legally able to accept hazardous waste.

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SOLVENT DISPOSAL

Solvent is expensive to buy and to discard. It makes sense to try to reduce the amount of solvent you use. Reuse or recycle your used solvent. Only as a last resort should you dispose of solvent. See these guide sheets for more information:

#13 *Solvent*
#14 *Solvent Reuse*
#15 *Solvent Recycling*.

Many waste solvents are hazardous wastes. It is very important that you manage your hazardous wastes according to the regulations. Guide sheets #7 and #8, *Hazardous Waste* and *Hazardous Waste Management*, have more information.

To properly manage your waste solvent you need to

- ✔ Find out if your waste is hazardous.
- ✔ Figure out how much hazardous waste you generate.
- ✔ Learn what rules apply to you based on how much waste you generate.
- ✔ Use the services of a waste transporter and disposal or recycling company legally able to take your waste.

Is Your Waste Hazardous?

Some waste solvents are listed hazardous wastes. This means they are on a list from the federal government of wastes regulated as hazardous. Many used solvents and the still bottoms (sludge) from recycling them are on the F list. Commonly used solvents on this list include trichloro-ethylene, methylene chloride, xylene, acetone, methyl ethyl ketone (MEK), toluene and others.

Some solvents are characteristic hazardous wastes, which means they are ignitable, toxic, reactive or corrosive. If the waste has a flash point of less than 140° F it is an ignitable hazardous waste. The flash point is the temperature at which the solvent will catch on fire.

Your solvent supplier should be able to tell you if your solvent is regulated as a hazardous waste, or you can check with the manufacturer. If you cannot find out from these sources, contact the Missouri Department of Natural Resources (DNR) or another environmental professional for help. You will need the material safety data sheet (MSDS) listing the chemicals in your solvent and the flash point.

If the solvent is not a hazardous waste, the paint or dirt in it may cause the used solvent to be a hazardous waste. If any contaminant in your used solvent is hazardous, your used solvent may be hazardous waste. Contact DNR for more information on this.

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If your waste solvent is a listed hazardous waste, anything it is mixed with is hazardous waste. For example, if you spray a listed solvent into your paint booth filters, the filters become hazardous waste.

Managing the Waste

You need to keep track of how much hazardous waste you generate. The rules you must follow depend on how much waste you generate. To learn more about this, see guide sheet # 7, *Hazardous Waste*.

Always keep good records about your waste — how much and what you generate, who transports it and where it goes. In most cases, you will need to get a generator identification number from DNR and use a manifest when you ship the waste off-site. The company that transports your hazardous waste must have a Missouri Hazardous Waste Transporter License.

Be sure your waste is going to a place that is legally allowed to take it. For a list of hazardous waste facilities in Missouri or a list of resource recovery facilities (recyclers), contact DNR at (800) 361-4827.

For more information on managing your hazardous waste solvent, see guide sheet #8, *Hazardous Waste Management*.

If your waste solvent is not a hazardous waste, check the MSDS for recommended disposal methods. Do not put liquids in your trash. Landfills in Missouri cannot accept liquid waste.

If the drains at your shop lead to a sewer and wastewater treatment plant, you may be able to pour water-based solvents down the drain. Contact the wastewater plant to ask if they can accept the water-based solvent. **Do not** put solvent, paint or other chemicals down the drain unless the wastewater plant has approved. **Do not** put solvent or any industrial waste down your drain if the drain does not lead to a wastewater treatment plant. See guide sheet #18, *Wastewater*, for more information.

Never pour solvent or any other waste onto the ground. Doing that can seriously harm the environment and you. Also, there are serious penalties for illegally disposing of waste.

REMEMBER

Find out if your waste solvent is a hazardous waste. Ask your supplier for nonhazardous solvents.

Be sure anyone who takes your waste is legally able to do so.

Never pour any waste onto the ground and never pour any chemicals down the drain unless you have permission from the wastewater plant.

For more information call (800) 361-4827 or write to
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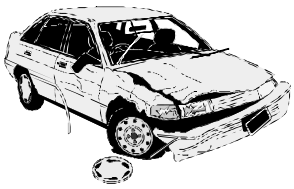
Preventing Pollution in Collision Repair - Guide Sheet #18

SURFACE PREPARATION



Surface preparation involves cleaning, paint removal, filling and sanding of the parts to be refinished. These activities can create hazardous waste, nonhazardous waste, air pollution and water pollution.

Some shops wash wastes from surface preparation down the drain. That is allowable only if the drain leads to a sewer and wastewater treatment plant and you have permission from the wastewater plant. Never send wastewater from your shop operation into a septic system or discharge it directly to the environment unless you have a permit from the Missouri Department of Natural Resources (DNR) to do so. See guide sheet #18, *Wastewater*, for more information.

Cleaning

Clean surfaces with soap and water before beginning the repair operation. Use cleaners with a low percentage of Volatile Organic Compounds (VOCs) or none at all. VOCs are chemicals that cause air pollution. Use high VOC cleaning products only if absolutely necessary.

Paint Removal

Chemical paint stripping may generate hazardous wastes and may release large amounts of VOCs and other air pollutants in your shop. Ask your supplier for chemicals with the lowest VOC content that will work. Check the material safety data sheet (MSDS) to find the VOC content and to find out if the chemical is a hazardous waste. You may need to check with your supplier or manufacturer.

Some shops wash the paint stripper down the drain. Remember, this is allowed only if the drain leads to a sewer and wastewater treatment plant and you have permission from the wastewater plant.

There are nonchemical paint removal methods you may want to consider. Plastic bead blasting, high pressure air, cryogenic stripping, carbon dioxide (CO_2) pellets or sponge blasting are technologies being used in some situations to remove paint.

The waste from paint removal may be hazardous, whether you use chemicals or nonchemical methods. See guide sheet #7, *Hazardous Waste*, for more information.

Filling

Polyester/fiberglass filler is used to fill in dents that can't be removed by mechanical methods. Body filler typically is not a hazardous waste, but check your MSDS or ask your vendor to be certain. It may be stored in a clean, dry storage area.

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Sanding
Sanding creates dust. Be careful not to let airborne dust from sanding leave your property.

Dust and waste that collects on the shop floor may end up in your floor drain. This can increase sludge volume and disposal costs. Carefully sweeping up dust and dirt will help avoid this problem.

Some shops find it worthwhile to buy a vacuum sanding system. Although the initial cost may seem high, the potential annual cost savings can be nearly equal. Benefits include cost savings due to reduced clean-up labor, reduced sandpaper use and improved shop cleanliness. It can also improve the quality of your paint job.

If your sanding dust includes paint that contains toxic metals like lead, cadmium, barium or chromium, the dust may be hazardous waste. See guide sheet #7, *Hazardous Waste* for more information. Using paints that don't contain these metals will help you avoid this problem.

REMEMBER

Don't send wastewater from your shop operation to a septic system.

Never dispose of any wastes or wastewater onto the ground. Take wastes and wastewater to a facility that is legally allowed to accept it.

Paints, primers and topcoats may contain toxic materials, such as lead, cadmium and chromium causing them to be regulated hazardous waste. If you have dust or other wastes that contains some hazardous paint, they too may be hazardous waste.

POLLUTION PREVENTION
Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Ask your vendor for nonhazardous paints and paint strippers.

√ Keep hazardous wastes separate from all other wastes.

√ Don't use more filler than is necessary. Keep track of how much filler each person in your shop uses. The person who uses the least amount per job may be able to train other staff on how to use less filler.

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Preventing Pollution In Collision Repair - Guide Sheet #19

WASTEWATER

Collision repair businesses generate wastewater during daily operations. Sources of wastewater include water from cleaning cars, parts and shop floors. This wastewater may contain metals that can cause it to be hazardous or it may be a corrosive hazardous waste. It may also contain oils, grease, solvents and detergents.

Most communities provide sewer collection and wastewater treatment facilities. If your business is connected to a sewer and treatment plant, contact them to discuss the materials you wish to dispose of in the sewer system.

You may need to pretreat the wastewater in some way before putting it in the sewer. For example, an oil/water separator or treatment may be required. By pretreating your wastewater, you help assure the community's sewer and treatment system continues working for everyone.

In areas where a wastewater treatment facility is not available or cannot take your water, you must carefully manage the wastewater from your shop. If the wastewater is hazardous, you must manage it by sending it to a permitted hazardous waste facility. See guide sheet #7, *Hazardous Waste*, for more information.

If your wastewater is not hazardous, you can haul it to an approved wastewater treatment plant if the plant agrees. Also, if the wastewater is not hazardous, you may be able to treat it yourself. This will require a permit from the Missouri Department of Natural Resources (DNR) to assure that the treatment process you want to use will properly treat your wastewater.

If you cannot connect your shop to a wastewater treatment plant, you may be able to discharge domestic wastewater (water from restroom or kitchen facilities) to a septic system. On-site septic systems treating domestic wastewater are regulated by county health departments. You will still need to collect industrial wastewater (water from parts washers, floor cleaning, etc.) and manage it as described above. Do not put your industrial wastewater down the drain unless you are connected to a sewer and treatment plant and have permission from the plant.

Management practices that reduce, reuse and recycle the wastewater can greatly reduce your disposal costs. They will also help protect sewer systems and treatment plants. See the pollution prevention section that follows for some ideas.

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REMEMBER

If your shop is connected to a sewer system and treatment plant, contact the treatment plant to find out if you can put your wastewater down the drain. You may need to pretreat your wastewater before it goes to the treatment facility.

If your shop is not connected to a sewer system and treatment plant, you can

- Get a permit from DNR to treat the wastewater yourself, OR
- Collect the industrial wastewater and determine if it is hazardous waste. If it is hazardous waste, send it to a permitted hazardous waste facility. If it is not, you can haul it to an approved wastewater treatment plant if the plant agrees to accept it.

Do not send wastewater from your shop (except restroom or kitchen waste) to a septic system.

Never let untreated wastewater from your shop go outside onto the ground, down a storm drain or into a body of water.

POLLUTION PREVENTION

Preventing pollution can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Collect and recycle petroleum-based fluids such as used oil, transmission fluid and brake fluid.

√ Collect and recycle coolants from radiators.

√ Reuse dirty rinse water as makeup water in a hot tank or jet spray washer to pre-rinse parts.

√ Use drip pans to catch leaks before they hit the floor.

√ Use absorbents to clean up minor fluid leaks and spills.

√ Sweep floors before washing them.

√ Accumulate all sludges in a closed, marked container. Determine if they are hazardous waste and store and dispose of properly.

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